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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,776	07/08/2005	Toshihiko Ohashi	0216-0516PUS1	1474
2292	7590	09/26/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHANG, VICTOR S	
			ART UNIT	PAPER NUMBER

1771

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/541,776

Applicant(s)

OHASHI ET AL.

Examiner

Victor S. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/11/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Introduction***

1. Applicants' amendments and remarks filed on 9/11/2006 have been entered. The pages 3, 30, 63, 91, 113 in the specification have been amended.

### ***Election/Restrictions***

2. Applicant's election with traverse of Invention I, claims 1-6 and 13-15, and species A(a) in the reply filed on 9/11/2006 is acknowledged. The traversal is on the ground(s) that there are overlapping technical features between Inventions I and II, and there would be no undue burden on the Examiner to examine both inventions. This is not found persuasive because invention is either anticipated or obvious over Watanabe et al. (US 6632489) [abstract; col. 33, lines 30-50]. Further, since the claimed dispersion of moniliform silica strings lacks novelty, and does not make contribution over the prior, the unity of invention is lacking and the restriction requirement is proper. In summary, the claims 1-5, 14 and 15 are elected. Claims 6-13 are withdrawn.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-5, 14 and 15 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.

In independent claims 1, 14 and 15, the recitation “porous silica layer is comprised of a plurality of moniliform silica strings” is not supported by the specification, because a careful reading of the specification shows that “the coating composition comprises a product which is obtained by a method comprising: mixing a dispersion of moniliform silica strings with a hydrolyzable group-containing silane to obtain a mixture, wherein each of the moniliform silica strings comprises a plurality of primary silica particles which are linked in rosary form; and subjecting the obtained mixture to hydrolysis and dehydration-condensation” (emphasis added) [page 9, line 19 through page 10, line 2]. In other words, while a dispersion of colloidal moniliform silica strings is present in a silica sol for coating, nowhere is there a disclosure of how the structure of colloidal moniliform silica strings could be retained in the coagulated dehydrated gelled network of porous silica layer. The absence of moniliform silica strings in the porous silica layer is further evidenced by Figs. 5, 7 and 9 of the instant invention, because they clearly show that the porous silica coating is a gelled network of silica particles, and nowhere a plurality of colloidal moniliform silica strings can found in these figures.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-5, 14 and 15 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a credible asserted utility or a well

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established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, 14 and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lange et al. (US 4816333).

Lange's invention relates to an antireflective polymeric substrate having a silica coating thereon. The coating comprises a continuous gelled network of a porous coating having voids between the silica particles. If the open porosity is too small, the properties of the coating, such as adhesion and antireflectance may be reduced. If the open porosity is too large, the coating is weakened and may have reduced adhesion to the substrate. Generally, The average primary particle size of the colloidal silica particles is preferably less than about 200 Å to achieve good adhesion of the coating to the substrate, and is more preferably less than about 70 Å when

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antireflection properties are sought. The colloidal solution from which the gelled network is obtained is capable of providing an open porosity of about 25 to 70 percent when dried to provide a refractive index between preferably 1.20 to 1.30 [col. 2, lines 36-42; col. 4, lines 11-55]. Fig. 2 shows the antiflective property of a silica coated polyethylene terephthalate (PET) film [col. 3, lines 7-10].

For claims 1 and 4, the limitation “porous silica layer comprised of a plurality of moniliform silica strings” is not giving patentable weight and presumed to be directed to a product-by-process of forming the porous silica layer from a silica sol of colloidal moniliform silica strings, because while the specification of instant invention discloses that a dispersion of a plurality of moniliform silica strings in a silica sol is coated to a substrate and then dehydrated to form the porous silica layer, nowhere is there a disclosure of how the structure of colloidal moniliform silica strings could be retained in a gelled porous network. In fact, to the contrary, the Figs. 5, 7 and 9 of the instant invention clearly show that the porous silica coating is a gelled network of silica particles, and the colloidal moniliform silica strings are absent from the porous silica layer. Further, since the method limitation has not been shown on the record to produce a patentably distinct article, the formed article is rendered *prima facie* obvious. Finally, although Lange is silent about the size of the pore opening area and its relation to the primary particle size, since Lange’s average primary particle size reads on the average primary particle diameter of the instant invention of about 12-15 nm [specification, Examples 1, 13, etc.], and Lange also teaches that suitable porosity is critical to provide a refractive index between preferably 1.20 to 1.30, as claimed, a suitable size of the pore opening area and its relation to the primary particle size are reasonably considered to either anticipated by Lange, or a matter of obvious optimization of the

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reflectance to one of ordinary skill in the art of porous silica coated antireflective film. See MPEP § 2112.01.

For claims 2 and 3, the characteristics of the moniliform silica strings are also presumed to be elements of a product-by-process limitation, i.e., forming the porous silica layer from moniliform silica strings. Since the method limitations have not been shown on the record to produce a patentably distinct article, the formed article is rendered *prima facie* obvious.

For claim 5, since Lange teaches the same PET substrate for the same use as the instant invention [specification, Examples], the hardness of the substrate is reasonably considered to be either anticipated by Lange, or an obvious optimization to one of ordinary skill in the art of antireflective PET film.

For claims 14 and 15, since they claim essentially the same scope as claims 1-4, and each of the product-by-process limitations has not been shown on the record to produce a patentably distinct article, the formed article is rendered *prima facie* obvious.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

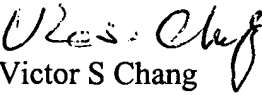
Watanabe et al. (US 6632489) teaches that the silica sol irreversibly changes to a silica gel as the medium is removed [col. 6, lines 51-52].

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Victor S Chang  
Examiner  
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9/19/2006